



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/726,395	12/01/2000	David Neil Slatter	1509-132	1288

7590

06/07/2004

Allan M. Lowe,
c/o Lowe, Hauptman, Gopstein Gilman & Berner
Suite 310
1700 Diagonal Road
Alexandria, VA 22314

EXAMINER

HENN, TIMOTHY J

ART UNIT

PAPER NUMBER

2612

DATE MAILED: 06/07/2004

3

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/726,395

Applicant(s)

SLATTER, DAVID NEIL

Examiner

Timothy J Henn

Art Unit

2612

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 December 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 22 and 23 is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☒ Claim(s) 21 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 December 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:
 - i. On page 10, Lines 18-19: The wording makes it sound like reference 101 in the figure 1 is the "flat surface" instead of the entire system.
 - ii. On page 12, line 15: Change "document 301" to "document 302".

Appropriate correction is required.

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

3. The abstract of the disclosure is objected to because of the use of legal phraseology. Correction is required. See MPEP § 608.01(b).
4. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Drawings

5. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the camera stand of claims 22 and 23 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 19-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

8. Claims 19-21 recites the limitations "said sensing means" and "said third portion". There is insufficient antecedent basis for these limitations in the claims.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 17 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by the applicant's admitted prior art.

[claim 17]

In regard to claim 17, note that the applicant's admitted prior art discloses a method of obtaining an image of a document using a digital camera (Figure 2; Page 11, Line 9 - Page 12, Line 10), the method comprising the steps of illuminating the document in a first image capture operation of the camera (Figure 2, Step 203); illuminating the document in a second image capture operation of said camera (Figure 2, Step 206); using an imaging detector to capture an image of said document from said image capture operations (Figure 2, Steps 205 and 208); during said image capture, controlling said imaging detector in accordance with the steps of: exposing a first portion (i.e. pixels of a certain color) of said imaging detector to said illuminated document during a first image capture operation to provide first image data (Figure 2, Step 205); exposing a second portion (i.e. pixels of a certain color different from the first color) of said imaging detector to said illuminated document during a second image capture operation to provide second image data (Figure 2, Step 208); storing said first and second image data (Figure 2, Steps 205, 208); and processing said first and second image data so as to obtain a final image of said document produced from said first and second image data (Figure 2, Step 209).

The office notes that even though the entire array is exposed during each image capture operation in the applicant's admitted prior art, claim 17 does not limit the first and second portions from both being exposed in any given image capture operation,

Art Unit: 2612

merely that the first portion is exposed during a first operation and the second portion is exposed during a second operation.

[claim 18]

In regard to claim 18, as broadly as written, it is noted that after a transfer operation (e.g. Figure 2, Step 205 or 208) the first portion will not contain a reflected image of the first light source (or an image of anything for that matter) and the second portion will not contain a reflected image of the second light source.

The office notes that this is different than the intended meaning of claim 18, however claim 18 does not limit the portions of the imaging detector from taking a picture of the entire document and does not limit any the device to a specific time during the "image capture operation" in which the portions can not contain certain images, therefore after a reset or transfer operation the imaging detector of the applicant's admitted prior art will meet the claimed limitation.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 1-3, 6, 7, 11-16, 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicants admitted prior art.

[claim 1]

In regard to claim 1, note that the applicants admitted prior art discloses a digital camera configured to obtain an image of a document (Figure 1), the camera comprising: a first light source for illuminating the document in a first image capture operation of the camera (Figure 1, Item 106; Page 10, Lines 26-29), a second light source for illuminating the document in a second image capture operation of the camera (Figure 1, Item 107; Page 10, Line 29 - Page 11, Line 2); an imaging detector for capturing an image of the document from the first and second image capture operations (Figure 1, Item 108; Page 10, Lines 23-24); a controller for controlling said imaging detector, said controller being configured to collect an image of a first portion of said illuminated document during said first image capture operation thereby providing first image data, and to collect an image of a second portion of said illuminated document during said second image capture operation thereby providing second image data (Page 10, Line 18 - Page 11, Line 7); a memory for storing said first and second image data (Figure 1, Item 108); and a processor for processing said first and second image data so as to obtain a final image data of said document produced from said first and second image data (Page 11, Lines 4-7). Therefore it can be seen that the applicants admitted prior art does not disclose an the structure of the image detector, i.e. an image sensor which is arranged in first and second portions.

However, it is well known in the art to arrange image sensors in multiple portions (e.g. colored pixels; photodiodes and vertical transfer portions; or odd/even lines) to achieve well known advantages (e.g. color photography; faster continuous photography; or interlaced readout respectively) (Official Notice). Therefore, It would have been

obvious to one of ordinary skill in the art at the time the invention was made to arrange the image sensor of the applicants admitted prior art to obtain the well known advantages discussed above.

[claim 2]

In regard to claim 2, as broadly as written, it is noted that after a transfer operation (e.g. Figure 2, Step 205 or 208) the first portion will not contain a reflected image of the first light source (or an image of anything for that matter) and the second portion will not contain a reflected image of the second light source.

The office notes that this is different than the intended meaning of claim 2, however claim 2 does not limit the portions of the imaging detector from taking a picture of the entire document and does not limit any the device to a specific time in which the portions can not contain certain images, therefore after a reset or transfer operation the imaging detector of the applicant's admitted prior art will meet the claimed limitation.

[claim 3]

In regard to claim 3, note that the imaging detector of the applicants admitted prior art (Figure 1, Item 108) is part of an integrated sensing unit, the unit further comprising a memory (Page 10, Lines 23-24). It is noted that the memory must inherently be broken up into multiple portions to be able to store the outputs of the pixels of the image detector.

[claim 6]

In regard to claim 6, note that the camera of the applicants admitted prior art further comprises at least one lens (Figure 1, Item 105) wherein illumination from the

Art Unit: 2612

illuminated document passes through at least one lens prior to being received by the imaging detector.

[claim 7]

In regard to claim 7, note that the imaging detector of the applicants admitted prior art camera is positioned above the lens (Figure 1; Page 10, Lines 23-24).

[claim 11]

In regard to claim 11, note that the applicants admitted prior art camera includes a controller, imaging detector, memory and first and second light sources included in a single unit (Figure 1) or "substantially integrated" together.

[claim 12]

In regard to claim 12, note that the applicants admitted prior art discloses holding a camera in a fixed position above a document (Figure 1; Page 1, Lines 10-13) but does not disclose the use of a camera stand. However, it is well known in the art to use camera stands to hold cameras at fixed positions to reduce camera shake compared to the user holding the camera at the desired position (Official Notice). Therefore, It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a camera stand to hold the camera at the desired position to reduce camera shake.

[claim 13]

In regard to claim 13, note that controller of the applicants admitted prior art captures the images consecutively (e.g. Figure 2). It is noted that the operation as shown in Figure 2 would inherently include a predetermined time period between the

image capture operations of the first image and second image, where the predetermined time period is set by the image readout and processing times, pixel reset times and flash charging times of the system.

[claim 14]

In regard to claim 14, note that the first and second images are produced consecutively, one after the other in the applicants admitted prior art (e.g. Figure 2).

[claim 15]

In regard to claim 15, note that the detector and storage unit are integrated together (Figure 1, Item 108; Page 10, Lines 23-24).

[claim 16]

In regard to claim 16, note that the first and second light sources are positioned diametrically opposite each other on a circle, and comprising at least one lens positioned at the center of the circle (Figure 1).

[claim 19]

In regard to claim 19, note that the applicants admitted prior art discloses a method of image capture comprising the steps of: exposing the entire array (i.e. the first and second portions of the array) to the illuminated document during the first image capture operation thereby resulting in a first image (Figure 2, Step 205), exposing the entire array (i.e. the second and third portions of the array) during the second image capture operation thereby resulting in a second image (Figure 2, Step 208), the first and second image capture operations resulting in third image (Figure 2, Step 209); storing the first and second images (Figure 2, Step 205 and 208); and processing the first and

Art Unit: 2612

second images so as to obtain a final image of the document (Figure 2, Step 209).

However, the applicants admitted prior art does not disclose the storing of the third or final image.

The office notes that it is well known in the art to store a final image for later viewing, processing or printing to easily recreate the image without the need for duplicating processing steps (Official Notice). It would have been obvious to one of ordinary skill in the art at the time the invention was made to store the final image to easily recreate it without recombining the final image from the first and second images.

[claim 20]

In regard to claim 20, note that the applicants admitted prior art discloses the steps of transferring the first image to a suitable memory following the first image capture operation (Figure 2, Step 205); transferring the second image to a suitable memory following the second image capture operation (Figure 2, Step 208) and processing the first and second images so as to obtain a final image of the document (Figure 2, Step 209).

13. Claims 4, 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art as applied to claim 1 above, and further in view of Hyneczek (US 5,430,481).

[claim 4]

note that the applicants admitted prior art discloses all limitation of claim 1, but does not disclose the specific structure of the imaging device used. However, imaging

Art Unit: 2612

devices such as the one described in claim 4 are notoriously well known in the art, one such example can be found in Hynecek. Hynecek discloses a CCD imaging device which is capable of operating in multiple modes and comprises a memory specifically allocated to a first portion (The office notes that every pixel in the array has an associated memory element, therefore a first portion can easily be defined which has an associated memory) of the imaging detector (Figure 1, Items 22, 24). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the imaging device of Hynecek to support the use of multiple modes to increase the overall functionality of the system.

[claim 8]

In regard to claim 8, note that the applicants admitted prior art discloses all limitation of claim 1, but does not disclose the specific structure of the imaging device used. However, imaging devices such as the one described in claim 8 are notoriously well known in the art, one such example can be found in Hynecek. Hynecek discloses a CCD imaging device which is capable of operating in multiple modes and comprises an array of light sensitive elements arranged for exposure to illumination (Figure 1, Item 22), an array of gates, for gating charge collected by the array of light sensitive elements (e.g. Figure 6) and an array of charge storage elements arranged to receive a plurality of charges from the array of light sensitive elements (Figure 1, Item 24), via the gates (e.g. Column 1, Lines 37-53). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the imaging device of Hynecek to

support the use of multiple modes to increase the overall functionality of the system.

[claim 9]

In regard to claim 9, note that Hynecek discloses an imaging detector which comprises an array of individual image sensing elements (e.g. Figure 1, Item 22), a control which comprises an array of individual control elements (e.g. Figure 6) and the memory comprises an array of individual storage elements (e.g. Figure 1, Item 24); wherein each image sensing element has a corresponding respective control element (The office notes that Figure 6 illustrates an individual pixel of the image sensing array and its respective control elements) and a corresponding storage element (The office notes that the storage array is a frame storage array which has storage for each pixel element), the arrangement being that each image sensing element accumulates charge in response to illumination, and the charge is controlled by the corresponding respective control element to be supplied to the corresponding respective storage element, or to be discharged from the image sensing element other than the storage element (e.g. Column 1, Lines 37-53; Column 6, Lines 60-62).

14. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art as applied to claim 1 above, and further in view of Roberts (US 5,452,004).

[claim 10]

In regard to claim 10, note that the applicant's admitted prior art discloses all limitation of claim 1. Therefore, it can be seen that the applicant's admitted prior art

lacks an image detector which includes portions that are configurable for use independently. Roberts teaches an imaging detector which includes the ability to create windows of portions of the array that can be individually readout and controlled (e.g. Figure 6). Therefore, It would have been obvious to one of ordinary skill in the art at the time the invention was made to configure the imaging detector of the applicants admitted prior art to include window functionality such as that described in Roberts to increase the overall functionality of the device.

Allowable Subject Matter

15. Claims ~~2~~, ~~18~~ and 21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

[claim 21]

In regard to claim 21, the prior art does not teach or fairly suggest a system such as claimed wherein the first, second and third images are combined into a final image.

16. Claims 22 and 23 are allowed.

[claims 22 and 23]

In regard to claims 22 and 23, the prior art does not teach a stand with a flash and controller which controls a camera flash and the stand flash as claimed.

Conclusion

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following prior art further shows the current state of the art in scene photography associated with synchronizing light sources to different images:

- | | | |
|------|---------------------|--------------|
| i. | Wilson | US 4,888,644 |
| ii. | Vanderschuit et al. | US 5,093,763 |
| iii. | Shashua et al. | US 5,550,641 |

The following prior art further shows the current state of the art in document scanning in multiple passes where the images do not overlap:

- | | | |
|----|------|--------------|
| i. | Chiu | US 6,650,442 |
|----|------|--------------|

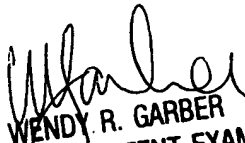
18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy J Henn whose telephone number is (703) 305-8327. The examiner can normally be reached on M-F 7:30 AM - 5:00 PM, alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy R Garber can be reached on (703) 305-4929. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2612

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TJH
5/27/2004


WENDY R. GARBER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600